ABSTRACT

Glutathione (GSH) is a tripeptide of extreme importance as a catalyst, reductan, and reactant. It can be depleted intracellulary either by forming a direct complex with an electrophilic agent (accomplished investigationally by agents such as bromobenzene or diethyl maleate), by way of inhibition of synthesis, or by subjecting cells to oxidant stress. Most cells, except for epithelia cells, do not have a direct transport capacity for intact GSH. Non-epithelial cells must either transport precursor substrates for GSH synthesis or salvage amino acids from circulating GSH for reuse in intracellular resynthesis. Dietary cysteine is a rate limiting substrate for the synthesis of glutathione and also inhibits GSH efflux. Although GSH is synthesized from precursors in virtually all cells, the liver is the main source of plasma GSH. Protection and support of liver function is paramount to elevating GSH levels. The disclosure is also of a unique combination of nutritional supplements including n-acetyl cysteine, vitamin C, l-glucosamine, n-acetyl d-glucosamine, quercitin, sylimarin, Alpha lipoic acid and high protein, low fat whey that are combined to support various bodily systems involved in glutathione synthesis, reutilization and storage; all intended to elevate glutathione concentration in the mammalian cell.